**Essential Laboratory Calculations – March 2014**

Learn and review basic mathematical concepts and calculations commonly utilized in the laboratory setting and how to apply them. Learn pointers on accuracy, following protocols, data quantitation, and making measurements that are critical to experimental success and reproducibility. Review problem solving, as it relates to bench work, and how to present and decipher protocols in a written format used in peer-reviewed publications or grant applications.

**Faculty Trainer:** Elizabeth Harrington  
**Senior Scholar:** Anika Toorie  
**Dates:** March 10th, 17th, & 24th  
**Time:** 9:00am – 11:00am  
**Place:** J. Walter Wilson, Room 402  
**Register:** [bit.ly/1eCqWLZ](http://bit.ly/1eCqWLZ)

**Module Overview:**

**Monday March 10**  
1. Brief Introduction to lab safety as it relates to MSDS, proper disposal  
2. What questions should we ask before we start an experiment, i.e. Hypothesis, approach, controls, solutions  
3. Introduction/Demos for basic measurement tools that will ensure accuracy & reproducibility  
4. Review what is pertinent in data recording and what material should be displayed and/or recorded  
5. Problem Set #1

**Monday March 17**  
1. Go over calculations for making basic solutions  
2. Dilutions, Normality, Acids & Bases, pH, Buffers  
3. Problem Set #2

**Monday March 24**  
1. Preparing solutions, western blot, autorads, densitometry (Tentative)  
2. Decipher and review protocols for journal articles ect.  
3. Ready for publication? What gets displayed in the method section of journal article?  
4. Problem Set #3  
5. Review & clarify any module details or material.